State of Wisconsin/Department of Transportation

RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: Mar 31, 2002

Program: SPR-0010(36) FFY99	**Part: II Research and Development**
Project Title: Gyratory Compactor to Measure Mechanical Stability of Asphalt Mixes	**Project ID:** 0092-01-02
Administrative Contact: Nina McLawhorn	**Sponsor:**
WisDOT Technical Contact: Error! Bookmark not defined.	**Approved Starting Date:** Nov 1, 2000
Approved by COR/Steering Committee: $55,337.00	**Approved Ending Date:** Nov 1, 2002
Project Investigator (agency & contact): Hussain Bahia: UW-Madison	

Description: Error! Bookmark not defined.

Total study budget	Current FFY budget	Expenditures for current quarter	Total Expenditures to date
$55,337.00	**$18,445.66**	**$0.00**	**$0.00**

Progress This Quarter:
(Includes project committee mtgs, work plan status, contract status, significant progress, etc.)
The following sections include a summary of the progress made during last quarter:

Laboratory Study

The first part of Task 2 of this study (Laboratory Study- Table 1) of the project, has been completed. A total of twenty four (24) asphalt mixtures were used in this part of the study. These twenty four (24) asphalt mixtures are from ongoing projects or mixtures used for field applications, whose performance data are not available at the present time.

The second part of the Laboratory Study, Table 2, of the project has been designed and is currently being coordinated by using the Wisconsin Department of Transportation Pavement Distress Index (PDI) and recognizing sections of asphalt pavement with more and less than ½" of rutting. These sections will then be searched through the Wisconsin Department of Transportation (WisDOT) project database to match the section of pavement with the contractor that constructed the project and the mix design approved for that project. The contractors will then be contacted to receive materials used to test in the laboratory.

Establish a Mixture Design Criterion

Assembling of a database is part of Task 3 of the project (Establish a Mixture Design Criterion). This work has been continuing as more data has been collected in the laboratory. This database is being used to establish the mixture design criterion that is suitable for Wisconsin and that is compatible with the Superpave mixture design as much as possible.

Plans for Field Study

The field studies are being currently being planned for this coming summer of 2002. It is in coordination with another current project also being funded by the Wisconsin Highway Research Program dealing with permeability and density.

Table 1 Mixes without Performance Data

Contractor	Design No.	Mix Type	Binder PG	NM Size (mm)	Asphalt Content		
					Opt-0.5%	Optimum	Opt+0.5%
PD	505800	E-3	58-28	19.0	X	X	X
	505900	E-3	58-28	12.5	X	X	X
	510999	E-10	58-28	19.0	X	X	X
	511699	E-10	58-28	12.5	X	X	X
	500200A	E-30	58-28	19.0	X	X	X
	500200	E-30	64-22	19.0	X	X	X
AM	108012.5	E-3	58-28	12.5		X	
	1315-19-75FPot	E-1	58-28	19.0		X	
MT	7005-SPS(2)	E-10	64-28	12.5		X	
	60-06-E10-12.5	E-10	58-28	12.5		X	
PW	PW#62	E-3	58-28	12.5		X	
	PW#64	E-3	58-28	19.0		X	

Notes: PD – Payne & Dolan, AM – Amon & Son, MT – Mathy Construction, and PW – Pitlick & Wick.

Table 2 Mixes with Performance Data

Contractor	Mix Type	Binder PG	Performance	
Various	E-3	58-28	Satisfactory	X
			Poor	X
		64-28	Satisfactory	X
			Poor	X
	E-10	58-28	Satisfactory	X
			Poor	X
		64-28	Satisfactory	X
			Poor	X
	E-30 or higher	58-28	Satisfactory	X
			Poor	X
		64-28	Satisfactory	X
			Poor	X

Work Next Quarter:
Additional compactions will be run with the contractor mixes that didn't pass the volumetrics design criteria (%Gmm @ Nini, Ndes, and Nmax). When all twenty four (24) asphalt mixtures pass the volumetrics design criteria and the performance data is collected, a statistical analysis will be done to see the significant effects, and interactions. The twelve (12) mixtures of the total (Table 2) that have performances data recorded during compaction and/or under traffic will be collected and compacted in the next quarter. Other tasks that will be continued next quarter will include development of design criteria and the field study.

Circumstances affecting progress/budget:

None at this time

Gantt Chart:

PROJECT I.D.	STARTING DATE	COMPLETION DATE	MONTH	REPORT #	PERCENT OF
PROJECT # WISDOT	**NOV 1, 2000**	**Nov 1, 2002**	**March 2002**	6	

CONSULTANT FIRM NAME	% TIME ELAPSED	TOTAL PROJECT FUNDING	CONTRACT FUNDING
UNIVERSITY OF WISCONSIN - MADISON	68.00%	100%	100%

NAME OF STUDY

Using the Gyratory Compactor to Measure Mechanical Stability of Asphalt Mixtures

TASK *	YEAR / MONTH	2000 N	2000 D	2001 J	2001 F	2001 M	2001 A	2001 M	2001 J	2001 J	2001 A	2001 S	2001 O	2001 N	2001 D	2002 J	2002 F	2002 M	2002 A	Project	Task Completed Last Report	Task Completed This Report	Project Completed
TASK 1 : LITERATURE REVIEW																							
1.1 : Literature Review																				21	100	0	21.00
1.2 : Review Meeting																				4	100	0	4
TASK 2 : LABORATORY STUDY																				37.5	80	10	33.75
TASK 3 : ESTABLISH MIXTURE DESIGN CRITERIA																				17	0	25	4.25
TASK 4 : PLANS FOR FIELD STUDY																				8	0	30	2.4
TASK 5: FINAL REPORT																				12.5	0	0	0
SHOW PROGRESS BY USE OF A BAR CHART:	SCHEDULED																						
	COMPLETED																			100			65.40

(Submitted by)

(Date)

Note: Gantt chart shown in State Fiscal Year Quarters